Oncotype Dx Recurrence Score and its Relationship with Basic Immunohistochemistry for Breast Cancer Patients in a Colombian Cancer Unit

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Abstract:
- Immunohistochemistry (IHC) and gene expression profiling tests aim to improve the targeting of chemotherapy in invasive breast cancer (IBC) by more accurately identifying patients who will gain the most benefit.
- Oncotype Dx is a prognostic and predictive test available in Colombia since 2010, where it costs 5,000 dollars approximately.
- Analytical and clinical validity have been proved for Oncotype Dx but there are some concerns about limited evidence for its clinical utility.
- For IBC patients the correlation between IHC and RS Oncotype Dx is an interesting way to determine if gene expression profiling adds biological information to standard prognostic factors.

Objetives:
- Primary aim: to determine if RS is predicted by estrogen receptor (ER), progesterone receptor (PR) and Ki67 levels in HER2-negative IBC
- Secondary aims: to determine the correlation between age, tumor grade and tumor size with RS and analyze the concordance of ER and PR determined by IHC and RT-PCR

Methods:
- Prospective cohort study
- Clinica Las Americas Cancer Institute. November 2010 – October 2013
- 124 consecutive IBC patients with hormonal receptor positive, pN0-1a, Her 2 neu negative who underwent surgery and were also tested with Oncotype Dx
- ER, PR, Ki67 were used to create multiple linear regression models to predict RS
- ER/PR by IHC or RT-PCR: dichotomous variables
- Pearson correlation coefficient: continuous variables
- Cohen’s Kappa index (positive and negative): Correlation and concordance for IHC and RT-PCR hormonal receptors
- p-values <0.05: significant

Results
- n=124 patients. Median age: 56 (range, 33-78), 85% had tumor < 20 mm; 75% had histologic 2 and 3 grade; 6% had positive nodes.
- Age, tumor size and histologic grade do not predict the RS in multivariate analyses (p>0.05). The linear regression model for ER, PR and Ki67 was not predictive of the RS (adjusted R2=0.336).

Conclusions
- IHC for ER, PR and Ki67 did not predict RS.
- ER and PR: moderate correlation between IHC and RT-PCR.
- RS appears to give additional biological information to standard prognostic factors in our cohort.

Citation
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